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GLANFORD BRIGG RURAL DISTRICT  
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ANNUAL REPORT  
OF THE  
MEDICAL OFFICER OF HEALTH  
1959



GLANFORD BRIGG R.D.C.  
BARTON-ON-HUMBER U.D.C. BRIGG U.D.C.

*With the Compliments  
of  
The Medical Officer of Health*

PUBLIC HEALTH DEPT.,  
50, HOLYDYKE,  
BARTON-ON-HUMBER.

Tel. 3154.



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Public Health Department,  
50, Holydyke,  
Barton-on-Humber.

August, 1960.

Mr. Chairman, Ladies and Gentlemen,

I have endeavoured this year to modify the form of this report in response to the requests which you made last year. Larger type has been used in order to make the print easier to see, and an index has been included. In addition, the duplimat master sheets have been typed in my office, and it is hoped in this way that the report may be printed at an earlier date than in the past.

1. Vital Statistics.

(a) Birth, death and infant mortality rates.

The estimated mid year population for the district increased from 32,780 in 1958 to 33,580 in 1959. The birth rate in 1959 rose to 18.1, and the death rate fell to 10.6. This should result in a further natural increase in the population. This increase, however, is likely to be modified by the migration of families from country to town. The stillbirth rate, the perinatal mortality rate and the neonatal mortality rate are all very close to overall rates for England and Wales, but we have been fortunate with respect to infant deaths, the infant mortality rate having dropped from 23.1 to 18.1. At a casual glance there is nothing intrinsically interesting in these figures, but when taken in conjunction with the neighbouring authorities of Brigg and Barton-on-Humber it is found that over the past few years Barton-on-Humber has had a persistently high perinatal mortality rate and Brigg a persistently low one. This Rural District has throughout experienced rates intermediate between these two towns. It was found that these differences were so great that it was most unlikely that they could be merely due to chance, and I have been conducting an investigation into the possible causes of these differences. This investigation has indicated that the probable cause of excessive mortality in Barton-on-Humber is a little known infection called toxoplasmosis. This is a protozoal disease whose mode of transmission is not known. Although when an adult is infected no obvious disease results in most instances, a proportion do suffer illness as a result. When an expectant mother is affected, however, even though she herself may suffer little inconvenience the parasite may cause serious damage to her unborn baby, which may be either stillborn, die in infancy or while appearing normal at birth subsequently develop eye disease, fits or show other evidence of nerve or brain damage. Just as the overall rates for England and Wales conceal the variation between districts with high and low stillbirth and neonatal mortality rates, the modest rates experienced by this district conceal the fact that some parishes have higher rates than others. It is likely that in some parishes in this district influences such as toxoplasmosis are causing stillbirths and infant deaths. In order to detect possible infections with toxoplasma gondii during pregnancy, therefore, from January 1st 1960 doctors in the entire area are being asked to send specimens of blood from expectant mothers to Sheffield University



for special tests, and all stillbirths and early neonatal deaths are being, so far as possible, investigated by post-mortem examination, and biological tests. Whether this work will eventually make it possible for effective prevention measures to be developed it is too early to say, but this is our ultimate aim. In the meantime, since it is known that human beings may acquire toxoplasmosis from contact with infected animals, and the latter do not necessarily appear ill, expectant mothers would be well advised to avoid unnecessary contact with animals. This does not mean that they should alter their way of life, for those who have for years been in regular contact with animals may well have already had this infection and be immune. Acquisition of a proposed pet such as a cat, dog, budgerigar or rabbit might however be postponed until after the birth of the baby.

#### (b) Causes of mortality.

There were 28 fewer deaths in the district in 1959 than in 1958. This improvement was more noticeable among women than men, for there were only 5 fewer male deaths against 23 fewer female deaths.

The biggest change in the pattern of mortality was the 37.6% reduction in deaths from cancer, which fall from 77 to 48, but a smaller drop, from 201 to 191 occurred in deaths from diseases of the vascular system. Slight increases in other causes of mortality compensate in part for these falls. It is not possible or wise to draw firm conclusions from the changes which occur in one year in so small a population since these could occur as a result of chance and are influenced also by changes in the age structure of the population. It is however, remarkable that there should have been such great reductions in deaths from cancer and vascular diseases since this experience differs from the trend in England and Wales as a whole.

During the past decade considerable changes have taken place in the frequency with which different conditions cause death. In some cases social change results in one type of disease becoming commoner, and another rare; and in other instances advances in medical knowledge make it possible to treat disease effectively so that it seldom causes death. Different diseases affect people at different ages, and as the age structure of the population changes over the years crude comparison of numbers of deaths, or even of death rates from any particular cause are likely to prove misleading. In order to overcome such sources of error in assessing which diseases are increasing in importance, and which are becoming less important, statistical methods are used to ascertain what the number of deaths would have been had the population structure remained the same as in some base year. By relating the number of deaths, obtained by applying current age, sex and cause specific death rates to this population, to the numbers of deaths which occurred during the base year, a measure of the increase or reduction in mortality from a specific disease is obtained. This figure is called the Standardised Mortality Ratio. An S.M.R. of 100 indicates no change, while an S.M.R. of 120 represents a 20% increase in that cause of death. In his Statistical Review for 1958 the Registrar General publishes a table of S.M.Rs. for the period 1949 to 1958 based on a mean of deaths and populations for 1950 - 1952. From this table it can be clearly seen which diseases are ceasing to be important causes of death, and which will be the problems of the future: Infective and parasitic diseases show a marked fall as causes



of mortality, the S.M.Rs. being 40 for men and 36 for women. Of these diseases tuberculosis shows the most dramatic fall, closely followed by influenza, and poliomyelitis. Diseases of the ear and mastoid process also show a marked fall with S.M.Rs. of 40 for men and 39 for women.

The cancers show variable trends. Cancers of some sites show a fall while in others there is an increase. Only one category shows a marked decrease and this, neoplasms of unspecified nature, merely reflects an improvement in medical diagnosis and accuracy of death certification which enables a bigger proportion to be allocated to the correct primary site. The most dramatic rise in cancer mortality is in deaths from cancer of the lung, bronchus and trachea, for which the S.M.R. is 142 for men and 121 for women.

Diseases of the circulatory system showed little change, the drop in mortality from rheumatic fever, which declined to a third of its former level compensated for the big increases in mortality from arteriosclerotic heart disease and coronary disease, other diseases of the heart, and high blood pressure.

The outstanding changes in the remaining causes of mortality are the increase in diseases of the pancreas in men, increase in the suicide mortality for women, a general increase in mortality from diseases of bones and joints (except for osteomyelitis in men, which showed a fall) and an increase in accidental deaths. In the latter category accidental poisoning by gases and vapours is outstanding with S.M.Rs. of 173 for men and 162 for women, but motor vehicle accidents and accidental falls also showed an increase.

Although the figures for our district followed a different pattern last year this could well be a chance phenomenon, and the national trends may well prove a better guide to the future. It must always be borne in mind, however, in considering changes in incidence of mortality from particular causes that man is mortal. He must die sooner or later. Reduction of one cause of mortality must be balanced in time by an increase in some other. Our aim is not to make man live forever, but merely to eliminate mortality from those diseases which kill men during their early and productive years. The elimination of causes of morbidity (illness) is of far more importance than the elimination of mortality.

## 2. Infectious Diseases.

### (a) Notifiable diseases.

Although the total number of notifications of infectious diseases went up by nearly 50% this was due predominantly to the large increase in measles notifications. As you are probably aware, measles epidemics occur alternate years, but in an area as widespread as this not all parishes have their epidemic in the same year, and consequently the fluctuations are less wide than those observed in more compact communities. Nevertheless it is usual to have about 300 cases in the "low" years and 500 cases in the "high" years.



The rise in dysentery notifications from 20 in 1958 to 87 in 1959 may or may not indicate an increase in incidence. Only a small proportion of cases seek medical advice and are notified, and not all doctors notify cases which have not been bacteriologically proven. There is some ground for believing, however, that dysentery is in fact increasing in prevalence, although some of the apparent increase may be due to more frequent use of bacteriological laboratories and better diagnosis.

As you know, dysentery is commonly spread by means of fingers. Toilet paper is not impervious to germs, and the fingers of a sufferer become contaminated when he visits the toilet. Everything he touches subsequently becomes infected - the lavatory seat, flushing handle and doorknob. When he washes his hands, as he should immediately afterwards, he may re-infect them in turning off the tap which became contaminated when he turned it on, and he may then contaminate the towel. Scrupulous attention to personal hygiene is necessary to prevent the spread of this infection, but contaminated surfaces do become safe as the germs tend to die on drying especially if warm. Good ventilation, and dry warm conditions tend to prevent the spread of some dysentery, and this is why February is now the peak month. One of the factors favoring the spread of dysentery may be the change from the old privy-in-the-garden to the water closet. The old privy was usually kept very well ventilated for obvious reasons, and as there was no flushing handle, and often no doorknob, the risk of picking up infection was not as great as one might have expected. Installing water closets is aesthetically a great advance, and by the water carriage system combined with treatment of sewage reduces risks of spread of many diseases and to some extent from worm diseases. It may, however, be responsible for an increase in the "dirt" diseases unless a separate compartment for a wash-hand basin is installed in the same compartment. The need to use this after each visit. Doctors should also operate wash basin taps and pedal operated W.C. flushing systems. The absence of communal towels would also help.

Notifiable diseases are increasing for some time. There were 105 cases notified in 1957, 27 cases in 1958 and only 4 in 1959. This may well be due to the effect of vaccinating infants against the disease. It should not be assumed that the disease is disappearing, however. Children who have been immunised against it may still get whooping cough, but their attacks may be so mild that unless specimens are sent to a laboratory it is not possible to tell that they have whooping cough and not just a mild bronchitis!

The apparent incidence of scarlet fever continued its slow decline, but here again the figures may well be misleading. Often the disease is very mild indeed and some cases are not notified. This has resulted in some difficulty in one village where a minor outbreak affected a number of school children, but some cases were not notified. In consequence measures to prevent further spread of infection were handicapped.

There were no cases of poliomyelitis in the district in 1959 and no cases of food poisoning were notified. The only other disease which showed an increase was tuberculosis, notifications of pulmonary tuberculosis rising from 5 to 8, and notifications of tuberculosis meningitis rose from none to 2.



(b) Vomiting disease.

As usual, there were a number of outbreaks of gastro-enteritis in schools, notably at Worlaby and Winterton, and attempts were made to identify the cause of these. As on so many previous occasions no bacterial cause could be found, and it was felt that these were outbreaks of virus "Winter Vomiting Disease". One of these incidents, that at Worlaby, was of special interest because the index case had only just returned to the district from a holiday, and only came in contact with two of the people who were among the first to develop symptoms, for a few minutes. It was therefore possible to determine accurately the incubation periods in these two cases, and also, since in one case no physical contact, direct or indirect, occurred, it seemed plain that the infection had been spread by means of "droplets" of saliva (or "droplet nuclei") which are sprayed into the air during speech, and by sneezes.

Since this particular outbreak offered a most unusual opportunity for research into the disease more strenuous efforts than usual were made to determine the cause. Specimens of faeces and throat washings were obtained as fresh as possible, and put into deep-freeze. The frozen specimens were then transported, packed in freezing mixture, to the laboratory for forwarding to the Virus Reference Laboratory. Attempts were made to grow virus from these specimens in tissue culture, but I regret to say that no virus was identified.

This, of course, was very disappointing but hardly unexpected. No one has yet demonstrated a virus from winter vomiting disease in children or adults, nor has the virus from infantile gastro-enteritis been cultured.

We know that two virus' do in fact exist because Irving Gordon in America was able to produce a disease resembling winter vomiting disease by infecting volunteers with filtered material from cases of infantile gastro-enteritis. The position is therefore rather similar to that of the "common cold" a year or so ago, in that it can be shown that a filter-passing agent causes the disease but it cannot be detected in tissue culture. It may be that the recent advances made by Andrewes in culturing the "common cold" virus will also show us how, in future, the vomiting disease virus may be investigated.

Virus' are too small to be seen under an optical microscope and will only grow inside living cells. When cultured in living cells (chick embryo or tissue culture) their presence can only be detected if the virus produces visible damage to these cells. In normal tissue culture, therefore, some virus' cannot be detected. It has now been found, however, that when the tissue culture is grown in a fluid which is more acid than usual the common cold virus grows more readily, and also produces some visible damage. As a result the way is now open for the "common cold" virus to be studied intensively in the laboratory. A similar mechanism may well be operative in the case of the vomiting disease virus. Since vomiting is the prime symptom it does seem that the stomach lining may be the part of the body most affected, although the virus is more likely to enter through the respiratory system. Now the stomach lining, as you all know, contains and secretes acid. If this virus only damages cells severely when they are bathed in, or contain,



acid it would account for the symptoms of the disease. Consequently in spite of this year's failures I feel that it will still be worthwhile attempting to grow virus from specimens in future outbreaks. There are of course other factors which may be responsible for the failures to grow virus. We cannot know, for instance, that freezing does not damage the virus, or which type of cells will best support its growth, but unless the attempts are made we cannot ever hope to conquer this disease, and the possibly related Infantile Gastro-enteritis which from time to time kills numbers of babies.

### 3. Immunisations against Infective Diseases

The acceptance rate for immunisation against diphtheria has not shown any appreciable change, but whereas in the past most infants were immunised against diphtheria only, or more commonly with diphtheria and whooping cough together using a combined vaccine, the overwhelming majority of primary immunisations of infants were with a triple antigen during 1959. This is an excellent thing, for the triple antigen protects against diphtheria, whooping cough and tetanus. Now tetanus is quite a rare disease, but the germ which causes it is common and may be found in well manured and cultivated land. Any wound, particularly if of the deep puncture type, caused by an implement used in horticulture, or which has been in contact with garden soil, may result in serious and often fatal illness due to tetanus. To prevent this, the doctors usually give anti-tetanus serum to people with such wounds. This serum is made by immunising horses against tetanus and refining the horses' serum. It contains horse anti-tetanus antibody and confers short lived passive immunity when injected. When given to someone who has never before had any, this serum prevents tetanus from occurring after a wound. Unfortunately it has been found that when this serum has been given to a human being on a number of occasions that person develops antibodies to horse anti-tetanus serum, which is rapidly destroyed and excreted. In consequence the serum ceases to be effective, and that person may develop tetanus after an injury in spite of having been given anti-tetanus serum.

In addition to this mechanism which renders A.T.S. ineffective after repeated use there is another reason why we should not rely upon it. Some people become allergic to horse serum when they have had one or more doses. If given further doses they may then develop symptoms which may be alarming and occasionally they may get fatal anaphylactic reactions.

People who have been actively immunised against tetanus have an immunity which lasts for years. Detectable antibody persists in the blood for about 5 years after a course of immunisation with A.T.T. but even after this has disappeared the ability to produce it rapidly remains. Some degree of protection therefore probably persists for life, but for complete protection boosting doses may be given every five years or following any injury. This vaccine contains no horse serum, and is devoid of the risks inherent in A.T.S. Although it takes some time for immunity to develop after the injection, and cannot therefore be used instead of A.T.S. a person who has been immunised with it is more adequately protected against tetanus than are those who have relied upon the serum.



In a district such as this, where agriculture is the major industry the chances are that most individuals will receive several wounds from soil contaminated tools during their life. The use of a vaccine which gives active immunity against tetanus may save a number of lives from tetanus or anaphylactic shock in the course of years.

The proportion of children who accepted vaccination against smallpox was the same as in the previous year, but fewer older children and adults were vaccinated. As in the past, vaccination against tuberculosis was offered to school children in the year before their final year at school, and the acceptance rate for this is good. This form of vaccination, known as B.C.G. has been shown to be effective in reducing the incidence of tuberculosis for at least 6 years. Since morbidity from tuberculosis is highest in early adult life it is right that it should be given at the age of 13 as at present and only used on younger children if they are unavoidably in contact with the infection.

Immunisation against poliomyelitis is now well accepted by the public. During the early part of 1959 there was a great demand for poliomyelitis vaccination subsequent to the death of a well known football player. Many people from this Rural District attended open vaccination sessions which I held in Barton-on-Humber at the time, but these sessions had to be discontinued owing to a national shortage of vaccine.

Later in the year, when supplies of vaccine were better, a publicity drive was staged and open clinics were held in 14 villages. The response, however, was poor.

#### 4. Water Supplies.

##### (a) Quantity.

We are very fortunate in this area in so far as our natural resources are more than sufficient to cover our present requirements for water. Since the water comes from deep bores which tap what is in effect a large underground reservoir dependant upon the winter and not the summer rainfall, we are not at the mercy of summer drought, as are those areas dependant upon surface waters.

The water source at Barrow is a particularly plentiful one. When pumping at the maximum rate the level of water in the bores only falls between 3 and 4 feet, and on cessation of pumping rises to resting level within less than a minute. This suggests that the chalk is grossly fissured and that this bore taps what may be a considerable underground stream. Other evidence of these underground streams is the existance on the Humber bank, and at various points in the Humber of "blow wells" or natural artesian wells. These are points where underground streams come to the surface and they run constantly summer and winter.

During the exceptionally dry summer of 1959, when many authorities were affected by a water shortage, the level of water in the bores at Barrow only fell to less than 30 feet below ground level. As the bores are about 250



feet deep it will be seen there was never any likelihood of this area being deprived of water by the drought. The limitation on supply from Barrow is in the capacity of the pumps and not the richness of the source. There are 4 bores, but only 3 have pumps installed in them at present. Two pumps are used, the third one being rested, repaired or kept as a standby to cover breakdown. The pumps, as operated at present, yield 100,000 gallons per hour.

The source at Winterton Holmes is not such a good one, partly due to the quality and nature of the limestone. The rock is less fissured, and water has to percolate through sound rock. When water is pumped at a rate of 70,000 gallons per hour the level in the bore falls to 80 feet below ground level, and takes several hours to return to resting level when pumping is discontinued. In its resting state the bore at Winterton Holmes is an artesian source, water flowing out of the bore under its own pressure even when no pumping is taking place. Like the Barrow bores, those at Winterton derive their water from the winter rainfall over a wide area and are not affected by summer drought.

At times of high demand the output of Winterton cannot be raised to the same level as that at Barrow, but supplies can be augmented by pumping from the disused bore at Wressle.

The reason why these underground sources are not affected by drought is that the water reaches them by percolating for a long time through rock. Rain which falls during the winter soaks into the ground and is taken up by the chalk which soaks it up like a sponge. Rain falling in summer either evaporates again or is taken up by vegetation, and even in a wet summer seldom reaches the underground "reservoir". Bores tapping the water in the deep rock strata draw water which fell as rain over large areas often many miles from the bore. In percolating through rock for considerable distances the water is filtered and is usually free of bacteria and clear. Unfortunately, however, it dissolves minerals from the rock and becomes "hard". In the limestone and ironstone area it also becomes saturated with iron salts, and when the pH rises due to loss of carbon dioxide on heating, iron compounds are precipitated causing red discolouration. This has in the past led to much complaint, particularly from housewives whose washing has been stained.

#### (b) Quality of Water - (Chemical). i) Winterton

The raw water at Winterton bore is excessively hard, and rich in iron as stated above. In order to render the water soft and reduce the iron content, the Water Board installed a lime process softening plant and this came into operation in 1959. A suspension of slaked lime is prepared and added to the water. This combines with calcium bicarbonate to form calcium carbonate and so remove the temporary hardness. A solution of washing soda is also added, which converts the calcium sulphate into calcium carbonate and sodium sulphate so removing the permanent hardness.

In order to hasten the sedimentation of the calcium carbonate precipitated in these reactions ferric hydroxide, prepared by adding ferrous sulphate to water (which takes up oxygen, and yields its sulphate radicle to



alkalis in the water to become  $\text{Fe}(\text{OH})_3$ , is added. After a period of sedimentation the treated water is slightly acidified with sulphuric acid and passed through sand filters. In this way the hardness is brought down from 450 ppm to about 60 ppm. Unfortunately the water picks up a little more lime and iron in the filter after treatment, and becomes a little more alkaline and iron-rich so that complaints regarding iron discolouration, although reduced are still occurring. One cannot be sure, however, how much of this is due to iron picked up at the filter and how much is due to the water picking up deposits left in the pipes from the time before the introduction of this treatment.

The quality of the water after treatment is greatly improved, but has the fault of being rather alkaline. The water has to be maintained in this condition to prevent lime and iron deposited in the pipes from going back into solution.

## ii) Barrow-on-Humber.

Water from Barrow-on-Humber is also very hard but since chalk is a sedimentary rock containing few minerals it is much easier to treat. The water at Barrow is softened by means of a base exchange resin which replaces the calcium ions by sodium ions. This process softens the water to zero hardness, and in order to prevent it dissolving lead from pipes and so causing lead poisoning, it is necessary to add to the softened water about 1 part in 10 of untreated water to bring the hardness up to 50 ppm.

The resultant water is of practically ideal quality from a chemical point of view. The only criticism which could be levelled against it in the present state of knowledge is that lacking mineral trace elements it may not provide the health benefits of some chemical substances. At present the only health result from this is the poor quality of teeth in people who do not get enough fluoride, an element which is sadly lacking in both Barrow-on-Humber and Winterton waters.

## Effects upon health of chemicals in water.

Neither the water from Barrow nor that from Winterton contains any of the metals such as lead and arsenic which are known to be harmful to health. The low content of fluorine, which I have already mentioned results in children in the area having teeth which decay very easily. As I have reported in previous years, raising the fluorine level from the present 0.075 ppm to 1.0 ppm might be expected to reduce dental decay in the next generation by about 60 per cent. This subject of Fluoridation, however, is still subject to much controversy and is unlikely to be introduced for some years.

Little is known about the effects of trace elements in water, but recently Dr. Allen Price has demonstrated that in parts of Devon the mortality rates from cancer vary from parish to parish and appear to be related to the water supply. That this is indeed due to water and not to occupational or social factors is suggested by the fact that in one village where occupational factors and social factors are constant but three different water sources are used the populations drinking these waters have



widely differing cancer mortality rates. He is at present investigating to see if this is related to radioactivity in the water, but there are two alternative hypotheses. These are:- 1) that some trace element is necessary for cancers to develop, and elimination of this from the water could reduce cancer incidence, or 2) that some trace element in the water in the other districts has a protective effect and reduces cancer incidence.

It is hoped that in the next few years it will be possible to compare cancer mortality figures for villages in this area drawing water from Barrow and Winterton to see if such differences are present here, but to allow for occupational hazards and the effects of air pollution it will be necessary to devise some statistical technique, and possibly employ only indices derived from specific types of cancer in women and exclude males.

### (c) Water Supplies - Quality - Bacteriological.

As you are aware, the principal danger from water borne disease is that of enteric fevers and cholera from water contaminated with faecal material. Rivers always contain large numbers of coliform bacteria, but only a few people excrete typhoid or cholera germs. Carriers of typhoid, like other people do move about, however, and a carrier might well visit the district. In order to determine the safety of water there and it is necessary to look for traces of faecal pollution, and usually upon tests for typhoid and cholera only would give a false sense of security. It is usual therefore to use the presence of coliform bacteria, particularly B Coli type 1, as the index of faecal pollution. In doing this we are allowing a considerable margin of safety, for many animals contain B Coli, but only human faeces are likely to contain typhoid or Cholera.

You will remember that considerable numbers of B Coli started to appear in the water at Barrow in July, 1958, but cleared up after about 4 months. In August, 1959, the trouble recurred on a smaller scale and lasted for a shorter time. All attempts to trace the source of this pollution failed. The behaviour of the bore at Barrow suggests that the water flows rapidly through a fissure in the chalk, and under these circumstances the pollution may well be coming from some considerable distance.

In order to reduce the risk to our water supplies the Council determined to give priority to the villages in the collecting area for this bore with respect to sewage disposal schemes, and it is hoped that when these are completed the intermittent pollution will cease. Only one hamlet has not so far been included in these sewerage schemes, that of Burnham. This hamlet, however, does lie close enough to the bore to be a potential hazard, and its inclusion in a scheme may have to be considered when the larger villages have been sewered.

Since the bacterial pollution could not be prevented, measures were taken to ensure that chlorination to destroy the germs was always adequate. The advice of the Ministry of health was sought both on methods of tracing pollution and on safeguards against



breakdown of the chlorination plant. A meeting was held at the Ministry in January, 1959, following which the North Lindsey Water Board installed a machine which measured the residual chlorine every few minutes and lit a warning lamp in the event of this falling below a safe level. Arrangements were made so that if this happened the pumps would be reversed for a few minutes to withdraw any faulty water from the pumping main, and thereafter for pumping to be discontinued until the chlorination equipment was working again. Additional connections were fitted so that the chlorine bottles could be changed without any interruption of chlorination.

As a result of these measures we are assured that our water will always be rendered completely safe by adequate chlorination, and are protected against the possibility of plant failure so far as this is practicable.

In fact all samples of water subsequent to treatment have been of excellent bacteriological quality. Samples are taken on your behalf by the P.H.I. for Barton-on-Humber and the position is kept under constant review.

The North Lindsey Water Board are to be congratulated upon the promptness and efficiency with which they have dealt with these problems. Their plant is modern and of excellent quality, and although there are still faults with the Winterton Holmes equipment they are investigating the possibility of improving this in a most commendable manner. We are fortunate in this area to be served by such an excellent Water Board.

## 5. Atmospheric Pollution.

Harmful agencies capable of causing disease can enter the body in a number of ways. They may enter through the skin, be swallowed with food or water, or they can be inhaled with the air we breathe. Public health measures instituted in the past hundred years have gone a long way towards preventing the contamination of food and water with harmful agents. Regulations, albeit not entirely adequate ones, do control the more dangerous of the poisons which enter the body directly through the skin, and in this country at least poisoning with aniline, nitro benzene, and organic phosphorus insecticides is rare. Disease due to harmful agents entering the body through the lungs along with the air we breathe is however all too prevalent.

Although it had been known for years that air pollution gave rise to disease in populations exposed to it, it was not until the London Smog disaster of 1952 when a severe fog associated with unusually heavy air pollution in the London area caused an excess of 4,000 deaths that the seriousness of the problem was brought home to us. The evidence from this episode, along with that of the Donora incident and the lesser London smogs of 1948, 1956 and 1957, shows that high concentrations of air pollution such as occur in conditions of "inversion" in industrial areas cause marked increases in deaths and morbidity from respiratory disease. This is the "acute" form of air pollution and is not likely to prove a serious danger in an area such as ours.



Unlike exposure to high concentration for a short time, however, the effects of exposure to lower concentrations for longer periods of time does not produce dramatic incidents to arouse the public conscience. Nevertheless, there is evidence to show that the effects are just as serious. Standardised Mortality rates for chronic bronchitis are high in densely populated areas where the air is polluted, and low in districts which are relatively free from pollution. There is some evidence that the causes of this are the acid pollutants such as sulphur oxides, for in districts where cement works emit alkaline lime dust which neutralises these acids, the mortality rate for bronchitis is lower than in surrounding districts.

Air may be polluted in many ways, and the effects of pollution vary with the nature of the pollutants. There is evidence that mortality from cancer of the lung is to some extent related to air pollution, and in the case of this disease it is the tar from inefficient combustion of coal in domestic fires which is probably responsible. It is not suggested that this factor is of as great importance as cigarette smoking in causing lung cancer, but it is the likely cause of some of the cases which occur in non-smokers or those whose tobacco consumption is moderate.

Different industries emit different mixtures of chemicals into the air, and consequently the nature of the risk in one area may differ greatly from the surrounding districts. The classic example of this is that of Salem, Massachusetts. Here a factory started to make fluorescent strip lighting tubes, and used a beryllium phosphor to line the tubes. A proportion of the population living near the factory developed an illness which was at first thought to be Sarcoidosis but which was eventually shown to be beryllium granuloma of the lung, a very grave condition caused by inhaling beryllium dust emitted by the factory.

Other industries may emit metals capable of causing disease. For example, manganese emitted from steelworks may in high concentration cause a pneumonitis or inflammation of the lungs, and vanadium, which accumulates in flues when certain types of oil are burned can cause serious disease in people who clean these flues. In order to detect harmful effects resulting from existing or new industrial processes it is desirable that each district keep statistical records of deaths by cause and relate these to the nature and extent of air pollution in the area. In this way local authority health departments can make a useful contribution to the national efforts at detecting harmful pollutants and take action where this is indicated to protect the public.

Most air pollution in England is due to the burning of coal, and consequently in much of the country the same pollutants occur. Smoke, containing carbon and tars, and flue gases containing carbon dioxide and sulphur oxides effect the air in most parts of the country. The effect of these chemicals upon health is under investigation at national level, and the efforts of local authorities measuring these pollutants are co-ordinated by the Department of Scientific and Industrial Research. This organisation designs and standardises the instruments and advises local authority staffs about the choice of sites for their apparatus. The



tendency to-day is to use smoke filter and continuous  $\text{SO}_2$  collecting apparatus, since this equipment measures the amount of  $\text{SO}_2$  daily and gives an indication of the quantity of smoke in the air. The latter measurement is made by assessing the darkness of the black stain made when the air is sucked through a white filter paper. In this district, where the black carbon particles of smoke would be mixed with white calcium oxide from cement works and red iron oxide from the steel works it is doubtful if this method would give a reliable indication, and so we continue to rely upon the Deposit Gauge and chemical analysis of the monthly deposit. An indication of the average amount of  $\text{SO}_2$  in the air is obtained each month by measuring the amount of sulphate formed on a lead peroxide instrument at each site.

Air pollution observation stations were set up in January, 1959, at Winterton and Burton Stather using our own instruments, and further stations were established at South Ferriby, Broughton, Hibaldstow and Kirton-in-Lindsey in May, 1959, using apparatus borrowed from Scunthorpe Corporation.

The sites for these instruments were chosen in the advice of Mr. Goss from the D.S.I.R., Warren Spring Laboratory. They were selected to give a fair assessment of the amount of pollution affecting the population of the villages and not aimed at detecting pollution from particular industries or factories. Some indication of the source of pollution at individual sites may however be obtained from the chemical analysis. The seasonal variations also give clues as to sources of pollution, for whereas industry functions all the year round, domestic coal fires are used far more in winter than in summer.

As you know there are considerable variations in wind direction and velocity from day to day, and the amounts of deposited matter, and its nature, will therefore vary greatly over short periods. Very great fluctuations in monthly deposit in one village are most likely to occur when there is a source of excessive pollution nearby, but which only affects that village when the wind is in the appropriate direction. Relatively high alkalinity (high pH figure) and high figures for ash and calcium combined with low  $\text{SO}_2$  and relatively low tar figures, suggests pollution from the cement works. Low pH, high  $\text{SO}_2$ , high ash figures with low levels of calcium and tar are suggestions of other industrial pollution, while high figures for tar and  $\text{SO}_2$  with relatively low total deposit would be expected where pollution was predominantly from domestic open coal fires.

It will be seen that at all 6 stations the figures for  $\text{SO}_2$  are lower in summer than winter, possibly reflecting the use of domestic fires. In contrast to this, the amount of deposited matter was higher in summer than in winter at Hibaldstow, Kirton and Broughton and was about the same summer and winter at South Ferriby. This was probably due to the lighter winds of the summer months not dispersing industrial pollution so far afield. In Winterton and Burton Stather where the total deposits were less there was more pollution in winter than in summer. The percentage of tar to total deposit was greatest in these two villages, and I suggest,



therefore, that the pollution there is probably mainly of domestic and not industrial origin.

The heaviest deposits occurred at Hibaldstow, and the chemical composition of the deposits from this site indicate that much of it probably comes from the Alpha Cement Works, 2 miles away. In some months cement works pollution also affected Kirton-in-Lindsey - for instance in May and June, 1959, when the deposits at this site had pH of 7.6 and 7.5, and the soluble calcium figures were high, this seems the logical explanation. The highest monthly deposit at Kirton, however - just short of 20 tons/sq. mile/month in June, 1959 - is small compared with heavy deposits at Hibaldstow, where the summer average was 24.14 tons/sq.mile/month.

Cement pollution at South Ferriby, where Eastwoods Cement Works is situated, was very much less, the monthly deposits varying between 8.28 and 15.54 tons per sq. mile per month. This may be due to the electrostatic precipitators fitted at this factory, and the fact that the deposit gauge was sited in the village a mile from the factory. Although the factory emits much cement dust at low level at times, only material from the chimney is likely to reach the village. Since both Hibaldstow and Kirton-in-Lindsey stations are about two miles from the Alpha Cement Works we may expect even lower figures at these sites when Earles eventually fit electrostatic precipitators to this plant.

## 6. Housing.

Standards of housing in this area are deplorably low. Having never enjoyed modern amenities, the population seems content to accept standards which the average town dweller would not tolerate. The value of modern amenities is not properly appreciated and many people seem to consider a low rent more important than a comfortable and easily run home. This has its repercussions upon standards of child care and hygiene in the home, both of which are poor in the majority of houses. Is it to be wondered at that there is a tendency for the younger people to migrate from villages and hamlets into the towns?

If we were to carry out our duties under the housing acts intensively and ruthlessly we could, at a price, effect a marked improvement, but this would entail building council houses on a scale quite unprecedented in this area. It would also, unless great care were taken, completely alter the character of the villages, for modern houses tend to be of similar appearance wherever they are built and are quite unlike the old cottages which make some villages so pleasing.

Up to date our efforts at slum clearance have continued at a steady pace governed by our rate of building new houses. This rate has been far too slow, for we have only dealt with less than a third of the properties in the five year programme proposed in 1955.

As an illustration of how low are the standards of housing I can cite instances where I have visited unfit houses and asked the Public Health Inspector to tell me if they are capable of being rendered fit at



reasonable cost, and therefore dealt with under Section 9 of the Housing Act. In such cases I am usually told that the cost would be prohibitive, and only a Section 16 notice could be fairly served, but that as there are so many much worse houses in the village which would have to be dealt with first, this house has not even been included in the 5 year programme!

Many of the poorer houses in the area are owned by people whose means are very limited. Not infrequently they are held in trust for children, the widow having a life interest in the property. Under such circumstances money for repairs is not readily available, and the effects of many years of rent restriction show in the degree of disrepair. What improvements, such as closet conversions, are undertaken are often ill planned. Commonly money is wasted putting in long drains to the back so that a W.C. can be installed in the old privy when it would have been both cheaper and better to have put the new W.C. in the house, protecting it from winter frost. Not enough use is made of the standard amenity grant to convert the unwanted spare bedroom into a bathroom and toilet. Such improvements could be undertaken even where the landlord has no money, for the council may lend money for this purpose. More difficulty however is probable where property is held in trust, for the "Landlord" in such case may not have the necessary authority to incur such expenditure.

If we are to preserve the character of our villages and, at the same time ensure an adequate standard of housing for the poorer half of the community, it will be necessary for us to do all in our power to ensure that all houses which are capable of being brought up to standard and improved are dealt with in this way before they deteriorate too far. In the case of property held in trust of course only such repairs as could be required under Section 9 of the Housing Act, 1957, could be insisted on, due to the lack of power to require the improvement of property in the 1959 Act. Property owned by impecunious landlords however might be purchased by the council and improved in those cases where the landlord was willing to sell. In other cases the powers under Section 9 of the Housing Act could be used in combination with an appeal to the landlord to take advantage at the same time of the Standard Amenity Grant.

Advantage might be taken, in the event of an owner appealing and the cost of the work being assessed by the court as "unreasonable", of the provision in the Act whereby the council is empowered to purchase such a house. Many problems might ensue from more extensive use of Section 9 of the Housing Act but such a policy might prove ultimately to be the best for the district.

As a health authority it must be our aim that everyone should live in sanitary conditions. For just so long as there are more families than there are good houses with modern amenities, it is inevitable that some people will live in unsatisfactory conditions. Since labour to-day must be mobile if unemployment is to be avoided, a slight surplus of good houses is necessary to permit this mobility. The worker in a tied house who wishes to change his job would also benefit from the existence of a



small surplus, and the newly married couples would benefit and be spared the frustrations of prolonged house hunting and the stresses of lodging with "in-laws".

On medical and social grounds then there is much to be said for the existence of a slight excess of really "good" housing, and it is at this point that conflict between the interests of health and finance arises acutely. No business man would wish to build a good and expensive house knowing that it will probably stand empty much of the time. The existence of such surplus housing, while desirable on medical and some social grounds, would result in competition between local authorities and private landlords for tenants. Rents would therefore be kept low and property values would suffer. Most of us, both councillors and officers, as house owners would be financially affected, as would the most influential part of the electorate. There is bound to be eventually therefore a conflict of interest between the Finance, Housing and Public Health Committees if ever the ideal state of affairs is approached. Despite the fears of a few from the more fortunate villages where sewerage schemes and available land have made reasonably adequate council house and private building possible, this state of affairs is not likely to be achieved in this area in the foreseeable future.

Your past achievements at Council House building and Slum Clearance have done a great deal of good, but the need is as great as ever. As a Public Health Authority we should press for more adequate provision of good dwellings, remembering that council house provision is intended as a social service and not primarily a business undertaking. We have a long way to go and it will take many years. Let us hope that in this time the public will learn that there are few things in life more worth paying for than a really comfortable house. Remember also how much distress is caused by anxiety about finding houses among those whose work involves moving or who are forced into uncongenial work in order to get a tied house. In terms of human happiness the stakes are high.

## 7. Problem Families.

During 1959 the Glanford Brigg R.D.C. associated itself with and sent officers to a new Case Conference which is held periodically in the Council offices. Social workers from all the statutory and voluntary agencies concerned attend and discuss the action necessary for the rehabilitation of problem families. I am pleased to record that in some instances useful results have been achieved, but as you all know this is a slow and discouraging task in many cases, and it would be foolish to pretend that quick successes can be expected. It often takes many years to fully rehabilitate an antisocial family.

If this conference is to achieve results, it must have the wholehearted support of the council. In many cases this has been forthcoming but in a few instances requests for re-housing, where this is considered to be an essential first step, have not met with any response. In part this is due to the present system of council house letting, and I submitted a report on this during the year.



Both the rehabilitation of problem families and the problem of caring for the homeless without breaking up the family would be greatly eased by the provision of a number of units of "intermediate accommodation". The County Council is preparing a scheme of financial assistance to district councils which undertake to provide this, in response to the Joint Ministry circular on Homeless Families. I strongly recommend the Council to support this scheme and to co-operate with the County Council by making such provision. As you remember I dwelt at some length in last years report upon the social and medical grounds for advocating rehabilitation of problem families and preventing family break up. The arguments I put forward then remain valid. You have made an admirable start at a difficult task. In 1960 you will have an opportunity to improve on what you have already done.

In conclusion I wish to thank the Health Committee and the Council for the co-operation they have given me during the year. Members have assisted in many ways and useful work has been done. Even when occasionally my reports have been unpleasant forbearance and toleration have been exhibited.

I am indebted to Mr. McIntosh and his staff for the work they have done during the year and for the information in the final pages of this report.

I am,

Your obedient servant,

J.S. Robertson.



General description of the district.

The Rural District of Glanford Brigg covers an area of about 136,595 acres and includes 41 parishes. The population is 33,580.

Although the main industry is agriculture, there are a number of industries in the district, including iron ore mines, chalk quarries, beet sugar manufacture, ship building and repairing, the manufacture of cement, bricks, artificial manure and poultry food, and the refining of oil. There are many other small industries. Many inhabitants of the district are employed in the steelworks in the Borough of Scunthorpe and a large number are also employed at Immingham Docks.

Area of the district .. .. . 136,595 acres.

Population of the district (1959) .. .. . 33,580

Number of inhabited houses .. .. . 10,770

Rateable Value 1959/60 .. .. . £372,798

Product of a penny rate 1959/60 .. .. . £1,180 (est).

# THE HISTORY OF THE UNITED STATES

THE HISTORY OF THE UNITED STATES, FROM THE FIRST SETTLEMENTS TO THE PRESENT TIME. BY J. W. FULTON, ESQ. VOL. I. NEW-YORK: PUBLISHED BY J. W. FULTON, 1840.

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HEALTH  
A 15 OCT 1960

C.R. Barton-on-Humber

Urban District Council

Glanford Brigg  
Rural District Council

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Brigg  
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Medical Officer of Health:

J. S. ROBERTSON, M.B., M.R.C.S., D.P.H., D.I.H.

(Office open daily 9.15—12.30).

Public Health Department:

50, HOLYDYKE,

BARTON-ON-HUMBER.

Tel. 3154.

Our Ref.:

Your Ref.:

Annual Report of the Medical Officer of Health,

Glanford Brigg Rural District Council - 1959.

It is regretted that in the table of Vital Statistics on Page 19 of this Report, the figure of 4.98 appears as the Perinatal Mortality Rate for the district in 1958. This figure should be 28.0.

\* These corrections take account of the differing proportions of old and young people in the area, and make the resulting rate comparable with that for England and Wales. Hence a health resort to which old people retire and die would have a high crude rate and a low comparability factor to compensate, whereas an industrial area with few old people would have a low crude rate and a high comparability factor. The comparability factor for this district is 1.05 for births and 1.06 for deaths.

# THE HISTORY OF THE UNITED STATES

OF THE UNITED STATES OF AMERICA, FROM THE FIRST SETTLEMENTS TO THE PRESENT TIME.

BY JAMES M. SMITH, LL.D., OF THE UNIVERSITY OF CHICAGO.

IN TWO VOLUMES. VOL. I.

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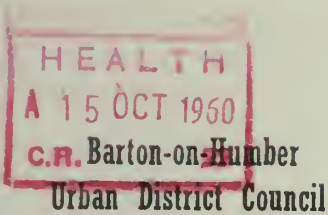
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VITAL STATISTICS

	<u>1957</u>	<u>1958</u>	<u>1959</u>
Mid-year Populations .. .. .	33,080	32,780	33,580
Live Births .. .. .	535	563	607
Stillbirths .. .. .	19	9	14
Infant Deaths under 4 weeks of age .. ..	6	9	10
Total Deaths .. .. .	325	383	355

	<u>Legitimate</u>			<u>Illegitimate</u>			<u>Total</u>
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>	
Live Births	285	295	580	13	14	27	607
Stillbirths	4	9	13	-	1	1	14
Infant deaths under 1 year of age	8	2	10	1	-	1	11
Infant deaths under 4 weeks of age	7	2	9	1	-	1	10

Glanford Brigg  
Rural DistrictEngland and Wales

	<u>1959</u>	<u>1958</u>	<u>1958</u>
Crude Birth Rate	18.1	14.45	16.4
+ Corrected Birth Rate	19.0	15.17	(16.4)
Stillbirth Rate	22.3	15.75	21.5
Infant Mortality Rate	18.1	23.1	22.5
Neonatal Mortality Rate	16.5	16.0	16.2
Perinatal Mortality Rate	35.4	28.0 <del>4.98</del>	35
Illegitimacy Rate	4.4	4.98	4.9
Crude Death Rate	10.6	11.7	11.7
+ Corrected Death Rate	11.2	12.4	(11.7)

+ These corrections take account of the differing proportions of old and young people in the area, and make the resulting rate comparable with that for England and Wales. Hence a health resort to which old people retire and die would have a high crude rate and a low comparability factor to compensate, whereas an industrial area with few old people would have a low crude rate and a high comparability factor. The comparability factor for this district is 1.05 for births and 1.06 for deaths.



CAUSES OF DEATH IN THE DISTRICT IN 1959.

This table gives the causes of death in accordance with the abbreviated list of 36 groups of the World Health Organisation Nomenclature regulations, 1948.

Causes of Death	Male	Female
1. Tuberculosis, respiratory .. .. .	1	-
2. Tuberculosis, other .. .. .	-	1
3. Syphilitic disease .. .. .	-	-
4. Diphtheria .. .. .	-	-
5. Whooping Cough .. .. .	-	-
6. Meningococcal infections .. .. .	-	1
7. Acute Poliomyelitis .. .. .	-	-
8. Measles .. .. .	-	-
9. Other infective and parasitic diseases .. ..	1	1
10. (Malignant neoplasm, stomach .. .. .	4	3
11. (Malignant neoplasm, lung, bronchus .. ..	3	-
12. * (Malignant neoplasm, breast .. .. .	-	3
13. (Malignant neoplasm, uterus .. .. .	-	-
14. (Other Malignant and Lymphatic neoplasms ..	15	15
15. Leukaemia, Aleukaemia .. .. .	1	2
16. Diabetes .. .. .	3	3
17. Vascular lesions of nervous system .. ..	29	30
18. Coronary disease, angina .. .. .	37	26
19. Hypertension with heart disease .. .. .	2	3
20. Other heart diseases .. .. .	29	21
21. Other circulatory diseases .. .. .	6	8
22. Influenza .. .. .	-	-
23. Pneumonia .. .. .	6	8
24. Bronchitis .. .. .	12	6
25. Other diseases of the respiratory system ..	1	2
26. Ulcer of stomach and duodenum .. .. .	2	-
27. Gastritis, enteritis and diarrhoea .. .. .	2	2
28. Nephritis and nephrosis .. .. .	2	-
29. Hyperplasia of prostate .. .. .	2	-
30. Pregnancy, childbirth and abortion .. ..	-	-
31. Congenital malformations .. .. .	2	1
32. Other defined and ill-defined diseases .. ..	20	22
33. Motor Vehicle accidents .. .. .	6	1
34. All other accidents .. .. .	6	1
35. Suicide .. .. .	3	-
36. Homicide and operations of war .. .. .	-	-
Total:	195	160

\* Malignant neoplasm means cancer.



Particulars of immunisations and vaccinations carried out in the Glanford Brigg Rural District during 1959.

Type of immunisation or vaccination.	under 1	1 - 4	5 - 14	15 or over	Total
Diphtheria and Whooping Cough Immunisation	11	14	5	-	30
Diphtheria Tetanus and Whooping Cough Immunisation	137	117	4	-	258
Diphtheria Tetanus Immunisation	-	1	-	-	1
Whooping Cough Immunisation	3	1	-	-	4
Whooping Cough and Tetanus Immunisation	-	-	-	-	-
Smallpox Vaccination	181	15	14	22	232
Smallpox Re-Vaccination	-	1	-	8	9
Tetanus Vaccination	-	3	14	8	25
Tetanus Booster	-	1	2	2	5
Diphtheria alone (Primary)	9		83		
Diphtheria Booster	359				

Estimated proportion of children immunised against Diphtheria in 1st year of life	24.4%
Estimated proportion of children immunised against Diphtheria by the age of 5	47.5%
Estimated proportion of children immunised against Tetanus in 1st year of life	23%
Estimated proportion of children immunised against Whooping Cough in 1st year of life	25%
Estimated proportion of children vaccinated against Smallpox in 1st year of life	29.8%
Estimated proportion of children vaccinated against Smallpox by the age of 5	32.2%

The above percentages are derived by relating immunisations to the number of babies born during the year. Since the number of babies born has been going up each year, these percentages will slightly underestimate the true proportion.



Table of Notifications of Infectious and Other Diseases by Age Groups.

Disease	0+	1+	2+	3+	4+	5+	10+	15+	25+	45+	65+	N.K.	Tot.
Measles	9	38	39	53	51	261	50	3	-	-	-	2	506
Whooping Cough	1	-	-	1	-	2	-	-	-	-	-	-	4
Scarlet Fever	-	2	3	3	1	12	3	-	-	-	-	-	24
Poliomyelitis	-	-	-	-	-	-	-	-	-	-	-	-	-
Smallpox	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria	-	-	-	-	-	-	-	-	-	-	-	-	-
Dysentery	2	5	3	4	3	27	6	7	13	5	10	2	87
Meningococcal Inf.	1	-	-	-	-	-	-	-	-	-	-	-	1
Ac. Pneumonia	-	-	-	-	-	-	-	1	3	2	-	-	6
Encephalitis Inf.	-	1	-	-	-	-	-	-	-	-	-	-	1
Encephalitis Post Inf.	-	-	-	-	-	-	-	-	-	-	-	-	-
Enteric Fever	-	-	-	-	-	-	-	-	-	-	-	-	-
Paratyphoid Fever	-	-	-	-	-	-	-	-	-	-	-	-	-
Erysipelas	-	-	-	-	-	-	-	-	-	-	-	-	-
Food Poisoning	-	-	-	-	-	-	-	-	-	-	-	-	-
Tuberculosis Resp.	-	-	-	-	-	-	1	2	4	1	-	-	8
Tuberculosis of C.N.S.	-	-	-	-	-	-	-	1	-	1	-	-	2
Tuberculosis Other	-	-	-	-	-	-	-	-	1	-	-	-	1
Total:	13	46	45	61	55	302	60	14	21	9	10	4	640

Food Poisoning:- Cases ascertained other than by notification - Nil.



Soluble Calcium as percentage of Total Soluble Matter.

	<u>Summer</u>	<u>Winter</u>
Hibaldstow	38.9	35.6
Kirton-in-Lindsey	34.8	33.1
South Ferriby	36.0	26.1
Broughton	31.2	25.2
Winterton	31.4	24.4
Burton Stather	26.9	20.3

This table indicates that the percentage of soluble calcium is highest in the villages of Hibaldstow, Kirton-in-Lindsey and South Ferriby, and provides some evidence that pollution in these villages comes in part from the neighbouring cement factories.

	<u>Tar as percentage of Total Deposit</u>		<u>Average Total Deposit (Tons/sq.Mile/month)</u>	
	Summer	Winter	Summer	Winter
Burton Stather	5.65	5.05	10.62	11.26
Winterton	5.46	4.13	12.28	13.19
South Ferriby	4.22	4.15	12.08	12.03
Broughton	3.53	3.9	15.57	13.04
Kirton-in-Lindsey	3.78	4.25	16.75	13.14
Hibaldstow	3.25	3.7	24.14	17.32

In general the villages with the lowest deposits have the highest proportion of tar. The latter comes predominantly from domestic fires which do not emit grit. The reason for the higher proportion of tar in summer than winter is not known. It may be that fires required for cooking are damped down with slack in summer, and so emit a higher proportion of tar due to lower temperature combustion. Among other possible explanations, however, comes the burning of garden refuse, which may give rise to carbon bisulphide soluble deposits.



Air Pollution Measurements

## Hibaldstow

		pH	Rain	Tar	Ash	Soluble Calcium	Total Solids	Sulphur Dioxide
May	1959	7.5	0.24	0.54	11.29	1.74	20.84	0.25
June	1959	7.4	1.06	0.68	5.81	2.62	18.39	0.38
July	1959	7.6	1.65	1.12	28.97	3.69	41.28	0.26
August	1959	7.0	0.32	0.61	12.00	1.68	23.43	0.32
September	1959	7.2	0.01	0.68	11.86	1.12	17.10	0.27
October	1959	7.3	1.65	0.78	11.76	3.69	26.31	0.52
November	1959	7.3	2.09	0.51	7.00	2.72	17.00	0.58
December	1959	7.0	2.13	0.58	5.41	4.24	18.84	1.13
January	1960	6.0	3.82	0.71	10.68	2.18	21.93	0.79
February	1960	6.8	1.89	0.68	7.10	2.65	16.08	1.04
March	1960	6.9	0.75	0.58	6.97	1.48	13.80	0.48
April	1960	6.8	1.42	0.58	13.60	2.16	23.80	0.49
Average for 6 Summer months (Apl. - Sept).			0.78	0.70	13.92	2.17	24.14	0.33
Average for 6 Winter months (Oct. - Mar).			2.05	0.64	8.15	2.82	17.32	0.76
			ins.	Tons per square mile				



Air Pollution Measurements

Spa Hill, Kirton-in-Lindsey.

		pH	Rain	Tar	Ash	Soluble Calcium	Total Solids	Sulphur Dioxide
May	1959	7.6	0.39	0.44	4.40	2.14	14.27	0.31
June	1959	7.5	0.79	0.57	7.27	2.28	19.78	0.49
July	1959	7.3	2.05	0.70	7.23	1.77	17.07	0.44
August	1959	7.0	0.32	0.87	7.43	1.74	17.94	0.46
September	1959	7.0	0.04	0.54	9.17	1.97	17.28	0.44
October	1959	6.8	1.87	0.53	3.24	1.52	8.94	0.55
November	1959	7.0	2.37	0.57	3.00	1.87	11.50	0.89
December	1959	5.4	2.80	0.53	2.47	1.14	8.30	0.99
January	1960	6.4	4.57	0.57	5.43	3.53	18.48	0.91
February	1960	6.4	2.01	0.57	6.40	4.17	19.39	1.06
March	1960	6.8	0.99	0.47	3.42	2.29	12.22	0.50
April	1960	6.5	0.95	0.63	6.54	1.96	14.17	0.58
Average for 6 Summer months (Apl. - Sept).			0.76	0.63	7.01	1.97	16.75	0.45
Average for 6 Winter months (Oct. - Mar).			2.44	0.56	3.99	2.42	13.14	0.82
			ins.	Tons per square mile				



Air Pollution Measurements

South Ferriby.

		pH	Rain	Tar	Ash	Soluble Calcium	Total Solids	Sulphur Dioxide
May	1959	7.4	0.04	0.61	3.85	1.01	13.38	0.41
June	1959	7.2	1.22	0.37	5.95	2.16	15.54	0.42
July	1959	7.5	1.65	0.47	5.98	2.04	15.13	0.32
August	1959	6.2	0.12	0.81	4.86	1.14	10.80	0.40
September	1959	7.0	0.04	0.37	4.26	0.89	8.28	0.44
October	1959	6.8	2.09	0.47	5.40	1.69	14.35	0.62
November	1959	6.8	2.01	0.61	5.88	1.73	13.07	0.97
December	1959	6.8	2.64	0.44	4.83	1.74	11.96	1.04
January	1960	6.5	4.45	0.47	4.39	1.77	14.22	0.73
February	1960	6.0	1.58	0.51	3.44	1.43	10.00	0.97
March	1960	6.2	0.91	0.51	2.57	0.60	8.55	0.59
April	1960	6.5	1.06	0.44	4.25	1.66	10.00	0.44
Average for 6 Summer months (Apl. - Sept.)			0.69	0.51	4.86	1.48	12.08	0.41
Average for 6 Winter months (Oct. - Mar.)			2.28	0.50	4.42	1.49	12.03	0.82
			ins.	Tons per square mile				



Air Pollution Measurements.

Ermine House, South View, Broughton.

		pH	Rain	Tar	Ash	Soluble Calcium	Total Solids	Sulphur Dioxide
May	1959	7.5	0.16	0.63	6.67	1.02	13.31	0.43
June	1959	6.9	1.14	0.53	10.64	1.57	19.71	0.68
July	1959	7.0	2.48	0.63	7.44	1.68	17.61	0.39
August	1959	6.0	0.12	0.57	8.30	0.77	17.01	0.50
September	1959	6.8	0.01	0.43	5.44	0.77	10.40	0.39
October	1959	7.0	1.87	0.47	9.67	1.63	18.54	0.64
November	1959	6.5	2.09	0.70	6.77	1.57	15.01	0.81
December	1959	6.8	2.60	0.47	4.90	2.00	13.30	0.92
January	1960	6.2	2.48	0.53	5.34	0.92	10.84	1.08
February	1960	6.3	1.62	0.47	6.84	1.58	14.61	1.06
March	1960	5.5	0.75	0.47	1.70	0.47	5.97	0.63
April	1960	5.5	0.91	0.53	8.87	1.22	15.41	0.59
Average for 6 Summer months (Apl. - Sept.)			0.80	0.55	7.89	1.17	15.57	0.49
Average for 6 Winter months (Oct. - Mar.)			1.90	0.51	5.87	1.36	13.04	0.85
			ins.	Tons per square mile				



Air Pollution Measurements.

West Street School, Winterton.

		pH	Rain	Tar	Ash	Soluble Calcium	Total Solids	Sulphur Dioxide
January	1959	6.3	1.89	0.43	3.41	0.91	9.18	1.35
February	1959	6.9	0.24	0.33	6.69	1.61	14.54	1.32
March	1959	6.8	1.30	0.43	5.56	1.01	10.76	0.88
April	1959	7.6	2.94	0.93	7.38	1.39	15.23	1.08
May	1959	5.2	0.20	0.83	4.34	0.83	10.10	0.51
June	1959	7.0	1.62	0.83	6.19	1.32	14.61	0.64
July	1959	7.0	1.14	0.56	5.50	0.93	11.96	0.50
August	1959	5.9	0.16	0.43	2.75	0.82	8.61	0.55
September	1959	6.5	0.04	0.43	6.92	1.11	13.18	0.53
October	1959	7.0	2.17	0.70	7.95	1.48	15.73	0.81
November	1959	6.8	1.93	0.66	5.37	1.17	12.92	1.19
December	1959	5.7	2.84	0.66	6.86	1.68	15.99	1.26
Average for 6 Summer months (Apl. - Sept.)			1.02	0.67	5.51	1.07	12.28	0.64
Average for 6 Winter months (Oct. - Mar.)			1.73	0.54	5.97	1.31	13.19	1.36
			ins.	Tons per square mile				



Air Pollution Measurements.

Old Post Office, Burton Stather.

		pH	Rain	Tar	Ash	Soluble Calcium	Total Solids	Sulphur Dioxide
January	1959	5.9	1.97	0.53	2.05	0.40	8.28	1.54
February	1959	6.8	0.20	0.26	4.84	1.23	10.66	1.45
March	1959	6.5	1.06	0.37	6.92	0.95	13.05	0.93
April	1959	7.4	2.48	0.70	4.60	0.60	9.54	0.82
May	1959	7.5	0.16	0.93	5.49	1.33	12.52	0.57
June	1959	6.0	1.58	0.50	2.45	0.89	8.25	0.41
July	1959	6.8	1.10	0.53	5.80	0.69	12.42	0.54
August	1959	5.9	0.12	0.53	3.54	0.65	9.07	0.63
September	1959	6.3	0.04	0.40	7.15	0.74	11.92	0.72
October	1959	6.5	1.85	0.36	7.62	1.15	14.07	0.90
November	1959	6.2	1.73	0.40	4.63	0.87	10.46	1.53
December	1959	7.0	2.68	0.50	5.23	0.82	11.03	1.16
Average for 6 Summer months (Apl. - Sept.)			0.91	0.60	4.84	0.82	10.62	0.62
Average for 6 Winter months (Oct. - Mar.)			1.58	0.57	5.22	0.90	11.26	1.25
			ins.	Tons per square mile				



ANNUAL REPORT OF THE CHIEF PUBLIC HEALTH INSPECTOR, 1959

HOUSING.

Total number of new houses erected during the year .. .. .	207
(i) By the Local Authority .. .. .	34
(ii) By other Local Authorities .. .. .	Nil
(iii) By other bodies or persons .. .. .	173

Housing Repairs and Rents Acts, 1954-57.

Number of certificates of disrepair issued .. .. .	7
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Inspection of dwelling houses during the year.

(i) Total number of dwellinghouses inspected for housing defects (under Public Health or Housing Acts) .. .. .	203
(ii) Number of inspections made for the purpose .. .. .	237

Remedy of defects during the year without service of formal notices.

Number of defective dwellinghouses rendered fit in consequence of informal action by the local authority or their officers	52
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Action under statutory powers during the year.

(i) Proceedings under Public Health Acts:-

(a) Number of dwellinghouses in respect of which notices were served requiring defects to be remedied .. .. .	6
(b) Number of dwellinghouses in which defects were remedied after service of formal notices .. .. .	6

(ii) Proceedings under the Housing Acts:-

(a) Number of dwellinghouses in respect of which notices were served requiring repairs .. .. .	Nil
(b) Number of dwellinghouses which were rendered fit after service of formal notices .. .. .	Nil
(c) Number of unfit houses purchased by local authority in accordance with Housing Acts. .. .. .	26
(d) Number of certificates of disrepair issued .. .. .	Nil

(iii) Slum Clearance - proceedings under the Housing Acts:-

(a) Number of dwellinghouses in respect of which Demolition Orders were made .. .. .	30
(b) Number of dwellinghouses demolished in pursuance of Demolition Orders .. .. .	8



(c) Number of dwellinghouses, or parts, subject to Closing Orders .. .. .	5
(d) Number of dwellinghouses, or parts, rendered fit by undertakings .. .. .	1
(e) Number of dwellinghouses included in confirmed Clearance Orders .. .. .	Nil
(f) Number of dwellinghouses demolished in pursuance thereof .. .. .	Nil
(g) Total number of dwellinghouses on which Demolition Orders are operative and which are still occupied except under the provisions of sections 34, 35 and 46 of the Housing Act .. .. .	15
(h) Total number of dwellinghouses occupied under sections 34, 35 and 46 of the Housing Act, 1957 ..	Nil
(i) Houses demolished or closed voluntarily by owners which would otherwise have been the subject of statutory action to secure demolition or closure .	4

(iv) Nissen huts or other similar Hutments:-

Number still occupied .. .. .	28
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It is anticipated that the occupants of these Hutments will be rehoused by December, 1960.

Housing Act - Overcrowding.

(i) Number of cases of overcrowding relieved during the year	Not known
(ii) Number of dwellings overcrowded at the end of the year .. .. .	Not known (15 cases have come to light).

Housing Act, 1949.

(i) Number of houses for which applications for grants have been received .. .. .	175
(ii) Number of houses subject to grant .. .. .	170
(iii) Number of houses owned by local authority which have been the subject of grant aid by the Ministry .. ..	Nil

Moveable dwellings, Tents, Vans, etc.

(i) Number of site licences .. .. .	3
(ii) Number of individual licences .. .. .	22
(iii) Total number of caravans permitted under above licences .. .. .	196
(iv) Number of inspections made during the year -	
(a) Sites .. .. .	7
(b) Dwellings .. .. .	12
(c) Number of caravans exempt from licence .. ..	5



FOOD PREMISES

## Bakehouses.

(i) Number in the district .. .. .	3
(ii) Number of inspections .. .. .	9
(iii) Number of contraventions .. .. .	Nil
(iv) Number of defects remedied .. .. .	Nil

## Milk Supplies.

(i) Number of distributors on register -	
(a) Sterilised .. .. .	68
(b) Pasteurised .. .. .	7
(c) T.T. .. .. .	3
(ii) Number of samples of milk taken in course of delivery (other than biological) .. .. .	Nil
(iii) Number of inspections of dairy premises .. .. .	73
(iv) Number of contraventions of Regulations .. .. .	Nil

## Ice Cream.

(i) Number of manufacturers on register .. .. .	2
(ii) Number of premises licensed for the sale of ice cream ..	102
(iii) Number of inspections of premises made .. .. .	26
(iv) Number of contraventions found .. .. .	Nil
(v) Number of samples taken .. .. .	Nil

## Meat Products.

(i) Number of premises registered for manufacture of meat products .. .. .	27
(ii) Number of inspections made .. .. .	35
(iii) Number of contraventions found .. .. .	Nil
(iv) Number of contraventions remedied .. .. .	Nil

## Other Food Premises.

(i) Number of inspections .. .. .	37
(ii) Number of contraventions found .. .. .	7
(iii) Number of contraventions remedied .. .. .	5

## Slaughterhouses.

(i) Number licenced -	
(a) Abattoir type .. .. .	1
(b) Private (individual) .. .. .	13
(ii) Number operated by local authority .. .. .	Nil



UN SOUND FOOD.

## Meat Inspection.

The following table gives details of meat inspection work carried out during 1959.

Carcases Inspected and Condemned in Whole or in Part.

	<u>Cattle</u> <u>excl.</u> <u>Cows.</u>	<u>Cows</u>	<u>Calves</u>	<u>Sheep</u> <u>and</u> <u>Lambs</u>	<u>Pigs</u>
Number killed	2390	2	4	5327	2319
Number Inspected	-	-	-	-	-
All diseases except Tuberculosis & Cysticerci:-					
Whole carcasses condemned	1	-	1	1	2
Carcases of which some part or organ was condemned	385	-	-	13	17
Percentage of number inspected affected with disease other than tuberculosis & cysticerci	16	-	-	.3%	.5
Tuberculosis only:-					
Whole carcasses condemned	-	-	-	-	-
Carcases of which some part or organ was condemned	112	-	-	-	36
Percentage of number inspected affected with tuberculosis	5	-	-	-	1.5
Cysticerosis:-					
Carcases of which some part or organ was condemned	2	-	-	-	-
Carcases submitted to treatment by refrigeration	-	-	-	-	-
Generalised and totally condemned	-	-	-	-	-

Other Foods Condemned -

N I L.

Method of Disposal of Condemned Food -

Collected and disposed of by Offensive Trades Establishments.



WATER SUPPLIES

## Wells.

(i)	New wells sunk	..	..	..	..	..	..	..	..	..	..	Nil
(ii)	Cleansed, repaired	..	..	..	..	..	..	..	..	..	..	Nil
(iii)	Closed as polluted	..	..	..	..	..	..	..	..	..	..	Nil

## Public Supply.

(i)	Percentage of houses supplied	..	..	..	..	..	..	..	..	93%
(ii)	Area supplied	..	..	..	..	..	..	..	..	100%
(iii)	New cisterns provided	..	..	..	..	..	..	..	..	Nil
(iv)	Cisterns cleansed, repaired, covered etc.	..	..	..	..	..	..	..	..	Nil

## Water Samples obtained for analysis.

Public SuppliesBarrow Bores

## Presumptive Coliform Count

	0 - 1	1 - 2	3 - 10	10+	Total
Raw Water	78	11	4	7	100
Treated Water	49	-	-	-	49

## Type 1 B. Coli. Count per 100 ml.

	0 - 1	1 - 2	3 - 10	10+	Total
Raw Water	91	4	4	1	100
Treated Water	49	-	-	-	49

Private Supplies Sampled

	0 - 1	1 - 2	3 - 10	10+	Total
Presumptive Coli.	9	1	2	9	21
Type 1 Coli.	15	-	1	5	21

1.  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

2.  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

3.  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

4.  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

5.  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

6.  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

7.  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

8.  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

1	2	3	4	5
1	2	3	4	5
2	3	4	5	6

9.  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

1	2	3	4	5
1	2	3	4	5
2	3	4	5	6

10.  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

11.  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

1	2	3	4	5
1	2	3	4	5
2	3	4	5	6

12.  $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

DRAINAGE AND SEWERAGE.

## Closets.

(i) Number of houses with privy vaults in the district .. ..	12
(ii) Percentage of houses with pail closets in the district ..	30%
(iii) Number of water closets substituted for pail closet and privy vaults .. .. .	381
(iv) Percentage of houses with water closets in the district	70%

## Drains.

(i) Drains examined, tested, exposed etc. .. .. .	804
(ii) Drains unstopped, repaired, trapped, etc. .. ..	175
(iii) Waste pipes, rainwater pipes, disconnected, required ..	420
(iv) New soil pipes or ventilating shafts fixed.. .. .	34
(v) Drains reconstructed .. .. .	1274
(vi) Number of notices served .. .. .	Nil

## Sewers.

(i) New lengths laid .. .. .	6
(ii) Number of open sewers cleansed .. .. .	41
(iii) Lengths of open sewers cleansed .. .. .	563
(iv) Blocked sewers opened .. .. .	88

Chains

## Cesspools and Septic Tanks.

(i) Cesspools emptied, cleansed, etc. .. .. .	301
(ii) Cesspools abolished .. .. .	253

GENERAL.

## Offensive Trades.

(i) Number of premises in the district .. .. .	1
(ii) Number of inspections .. .. .	6
(iii) Contraventions of bye-laws .. .. .	1
(iv) Contraventions remedied .. .. .	1

## Shops Act, 1950.

(i) Number of shops inspected .. .. .	39
(ii) Number of defects found .. .. .	4
(iii) Number of defects remedied .. .. .	4

## Disinfection and Disinfestation.

(i) Number of rooms of premises disinfected -	
(a) Infectious disease other than tuberculosis	1
(b) Tuberculosis	Nil
(ii) Number of premises subject to disinfestation	3



## Refuse Collection and Disposal.

- (i) Percentage of premises from which refuse is collected.. 95%  
(ii) Frequency of collection .. .. . Fortnightly  
(iii) Method of disposal .. .. . Part controlled Tipping

## Nuisances.

- (i) Number of nuisances during the year abated as a result of informal action by the Public Health Inspector .. .. . 27  
(ii) Number of nuisances reported to the Council .. Nil

## Details of Nuisances Abated.

	After Informal Intimation	After Statutory Notice
Accumulation of refuse	2	-
Foul ditches, ponds and Stagnant Water	3	-
Drainage	16	-
Poultry & Animals	Nil	-
Dangerous Premises	1	-
Miscellaneous Nuisances	5	-

## Rats &amp; Mice Destruction.

- (i) Number of rodent operatives employed .. .. . 1  
(ii) Number of premises treated -  
(a) dwellinghouses .. .. . 344  
(b) other premises .. .. . 114

## Atmospheric Pollution.

- (i) Number of visits .. .. . 66  
(ii) Number of nuisances ~~found~~ .. .. . 1  
(iii) Number of nuisances abated .. .. . Nil



### Progress in Drainage & Housing.

During the year under review considerable progress has been made in the sanitary circumstances in several parishes. The drainage improvements have been brought about chiefly by the new Sewerage Schemes in the parishes of Barrow, Scawby, Hibaldstow, and Burton on Stather. The housing improvements have arisen because of the publicity given to the Improvement Grant assistance, and further by the coming into operation of the Standard Grant assistance in the middle of the year.

In the parishes which have been provided with new Sewerage Schemes the position at the end of this year shows that 796 houses have been connected to the new sewers, 234 pails have been abolished and substituted by W.C.s, and 201 cesspools or settlement tanks have been abolished and filled in. In addition to these improvements, considerable lengths of watercourse formerly polluted are now clear of any sewage matter, and the Council have no further responsibility for maintenance.

During the year 110 applications for Improvement Grants were considered, and it is gratifying to note that a great number of these applications relate to isolated farm cottages. On completion of the work these modernised cottages provide sound, comfortable, and up-to-date accommodation, and both the farmer and farmworkers alike derive great benefit by such financial assistance. It is almost certain that many of these isolated cottages would have become empty, derelict, and useless to the farmer; and I feel sure by the Council's publicity we are avoiding the necessity of erecting Council houses in many of the agricultural villages. It is also interesting to note that at the end of the year 500 applications have been dealt with since the Improvement Grant powers began to operate.

In July of this year an additional duty was given to Local Authorities to give Grants for certain housing amenities, and once again, the Council were wise in giving publicity to the matter. During the half-year this Scheme operated 56 applications for Standard Grants were received, and there are definite signs that the numbers will grow. It is particularly interesting to note that in the parishes which are receiving the benefits of a new Sewerage Scheme the owners in many cases are not merely content to provide themselves with a water lavatory, but are anxious to go a little further and provide themselves with the full amenities available in the Standard Grant scheme. The approved applications dealt with by the end of the year will in due course, when the work has been completed, provide 42 baths, 44 wash-hand basins, 43 hot water supplies, 47 W.C.s., and 7 food stores.



FACTORIES ACTS, 1937 to 1959

Administration of the Factories Act, 1937.

Part 1 of the Act.

1 - Inspections for purposes of provisions as to health (including inspections made by the Public Health Inspectors).

Premises	Number on Register	Number of		
		Inspections	Written notices	Occupiers prosecuted
(i) Factories in which Sections 1, 2, 3, 4 and 6 are to be enforced by Local Authority	5	15	-	-
(ii) Factories not included in (i) in which Section 7 is enforced by the Local Authority	72	38	-	-
(iii) Other premises in which Section 7 is enforced + by the Local Authority. (excluding out-workers' premises)	12	12	-	-
Total:	89	65	-	-

+ i.e. Electrical Stations (Section 103 (1), Institutions (Section 104) and sites of Building Operations and Works of Engineering Construction (Sections 107 and 108).



2 - Cases in which defects were found.

Particulars	Number of cases in which defects were found				Number of cases in which prosecutions were instituted
	Found	Remedied	Referred		
			To H.M. Inspector.	By H.M. Inspector.	
Want of cleanliness (S.1)	2	2	-	-	-
Overcrowding (S.2)	-	-	-	-	-
Unreasonable temp. (S.3)	-	-	-	-	-
Inadequate ventilation (S.4)	-	-	-	-	-
Ineffective drainage of floors (S.6)	-	-	-	-	-
Sanitary Conveniences (S.7) :					
(a) Insufficient	-	-	-	-	-
(b) Unsuitable or defective	6	4	-	-	-
(c) Not separate for sexes	-	-	-	-	-
Other offences against the Act (not including offences relating to out-work).	-	-	-	-	-
Total:	8	6	-	-	-



PART VIII OF THE ACTDetails of Outwork (Sections 110 and 111) carried on in the district.

Number of out-workers in August list required by Section 110 (1) (c)	.. .. .	1
Nature of work	.. .. . Wearing apparel - making etc.	
Number of cases of default in sending lists to the Council (Section 110).	.. .. .	Nil
Number of prosecutions for failure to supply lists (Section 110).	.. .. .	Nil
Number of instances of work in unwholesome premises (Section 111).	.. .. .	Nil
Number of notices served (Section 111).	.. .. .	Nil
Number of prosecutions ( <del>Section 111</del> ).	.. .. .	Nil





